

Details of Honda JPN Application JP1994000181407 (the '407 application) from JPO
(<http://www6.ipdl.jpo.go.jp/Tokujitu/PAJdetail.ipdl?N0000=80&N0120=01&N2001=2&N3001=H08-038979>)

TECHNICAL FIELD

[Industrial Application]

[0001] this invention relates to the paint circulation system which carries out circulation feeding of the paint in a paint tank into a spray booth.

PRIOR ART

[Description of the Prior Art] As this conventional kind of a paint circulation system, there are some which were indicated by JP,60-12607,Y (application for a utility model patent No. 158826 [Showa 55 to]). This indication technology is shown in drawing 5 . In order to supply a paint to each paint gun 30 by 1 constant pressure according to this conventional technology, the pressure regulating valve 33 for pressure regulation needed to be arranged in each branching duct 32 which branches from the paint feed pipe way 31, and the back dam pump (pressure regulating valve) 34 needed to be arranged in the downstream of the paint feed pipe way 31. In addition, for a paint tank and 36, as for a filter and 38, a feeding pump and 37 are [35 / a paint return line and 39] pressure regulating valves.

EFFECT OF THE INVENTION

[Effect of the Invention] Invention concerning [as explained in full detail above] a claim 1, The paint feed pipe way which circulation feeding of the paint in a paint tank is carried out [way] by the drive of a feeding pump, and returns a paint to a paint tank again through a pressure regulating valve, The paint return line which it branches [return line] from this paint feed pipe way, and a pressure regulating valve is arranged [return line] in the end face side, and returns a paint to a paint tank again, The branching duct which branches from the aforementioned paint feed pipe way, and supplies a paint to a paint gun, and returns a paint to a paint return line, Although the paint in a paint feed pipe way will suppress throb of a feeding pump by the aforementioned pressure regulating valve and will be maintained by 1 constant pressure if a paint is fed with the aforementioned feeding pump since it had a pressure regulation means to have been prepared in this branching duct and to control the rate of flow by change of the path of passage Since the aforementioned paint feed pipe way is quite long, when suppressing throb of a feeding pump, some time lag generates it. The rate of flow is controlled by pressure regulation means by which the throb produced by this time lag was prepared in each branching duct, consequently it is held at 1 constant pressure, a paint is supplied to each paint gun by 1 constant pressure in this state, and the paint in each branching duct realizes the pressure regulation effect.

[0018] Thus, the piece of aluminum which replaces with the pressure regulating valve arranged in each conventional branch pipe, and is contained in a paint by the ability

reducing cost by the pressure regulation means in the case of a metallic paint since the throb produced by time lag can be lost is transformed by the operation of a pressure regulating valve granular, and the fault that the color of a painted surface changes to black can be abolished.

[0019] Moreover, invention concerning a claim 2 is that the paint in the shell constituted from the 1st hose member which prepared the aforementioned pressure regulation means in each branching duct, and this 1st hose member by the 2nd hose member of a minor diameter in the paint circulation system according to claim 1, and each branching duct flows the 2nd hose member of a minor diameter from the 1st hose member. The throb produced by time lag can be lost by the rate of flow of a paint being controlled.

[0020] Consequently, it is held at 1 constant pressure, a paint is supplied to each paint gun by 1 constant pressure in this state, and the paint in each branching duct realizes the pressure regulation effect.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Thus, it became cost quantity to arrange two or more pressure regulating valves 33 in the branching duct 32, and it was deformed for the piece of aluminum which is contained in a paint in the case of a metallic paint by the operation of a pressure regulating valve 33 granular, and had the trouble that the color of a painted surface changed to black.

[0004] this invention cancels the above-mentioned trouble. As the purpose is replaced with the pressure regulating valve arranged by each conventional branching duct, loses pulsation by controlling the rate of flow of a paint and obtains 1 constant pressure, it is by the granulation by the operation of the pressure regulating valve of reduction of cost, and the piece of aluminum by which metallic paint content is carried out again to offer the paint circulation system which can abolish the fault that the color of a painted surface changes to black.

[0005]

MEANS

[Means for Solving the Problem] this invention is characterized by providing the following in the paint circulation system been alike and involved, in order to attain the above-mentioned purpose The paint feed pipe way which circulation feeding of the paint in a paint tank is carried out [way] by the drive of a feeding pump, and returns a paint to a paint tank again through a pressure regulating valve The paint return line which it branches [return line] from this paint feed pipe way, and a pressure regulating valve is arranged [return line] in the end face side, and returns a paint to a paint tank again The branching duct which branches from the aforementioned paint feed pipe way, and supplies a paint to a paint gun, and returns a paint to a paint return line A pressure regulation means to be prepared in this branching duct and to control the rate of flow by change of the path of passage

[0006] and the connection hose in which you could constitute from the 2nd hose member of a minor diameter, and the aforementioned pressure regulation means was prepared by each branching duct from the 1st hose member which prepared the aforementioned

pressure regulation means in each branching duct, and this 1st hose member -- a member -- you may arrange and constitute a sleeve inside

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is composition explanatory drawing of one example of the paint circulation system concerning this invention.

[Drawing 2] It is the detailed cross section of the A section of drawing 1.

[Drawing 3] It is composition explanatory drawing of other examples of the paint circulation system concerning this invention.

[Drawing 4] It is the detailed cross section of the B section of drawing 3.

[Drawing 5] It is composition explanatory drawing of the conventional paint circulation system.

[Description of Notations]

1 Paint Tank

2 Feeding Pump

4 Paint Gun

6 Paint Return Line

9 Pressure Regulating Valve

10 Pressure Regulating Valve

11 Branching Duct

17 1st Hose -- Member

18 2nd Hose -- Member

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[Industrial Application]

[0001] this invention relates to the paint circulation system which carries out circulation feeding of the paint in a paint tank into a spray booth.

[0002]

[Description of the Prior Art] As this conventional kind of a paint circulation system, there are some which were indicated by JP,60-12607,Y (application for a utility model patent No. 158826 [Showa 55 to]). This indication technology is shown in drawing 5. In order to supply a paint to each paint gun 30 by 1 constant pressure according to this conventional technology, the pressure regulating valve 33 for pressure regulation needed to be arranged in each branching duct 32 which branches from the paint feed pipe way 31, and the back dam pump (pressure regulating valve) 34 needed to be arranged in the downstream of the paint feed pipe way 31. In addition, for a paint tank and 36, as for a filter and 38, a feeding pump and 37 are [35 / a paint return line and 39] pressure regulating valves.

[0003]

[Problem(s) to be Solved by the Invention] Thus, it became cost quantity to arrange two.

or more pressure regulating valves 33 in the branching duct 32, and it was deformed for the piece of aluminum which is contained in a paint in the case of a metallic paint by the operation of a pressure regulating valve 33 granular, and had the trouble that the color of a painted surface changed to black.

[0004] The place which this invention cancels the above-mentioned trouble and is made into the purpose Replace the pressure regulating valve arranged by each conventional branching duct, and by controlling the rate of flow of a paint, lose throb and 1 constant pressure is obtained. It is in offering the paint circulation system which can abolish the fault that the color of a painted surface changes to black by the granulation by the operation of the pressure regulating valve of reduction of cost, and the piece of aluminum by which metallic paint content is carried out again.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose. the paint circulation system concerning this invention The paint feed pipe way which circulation feeding of the paint in a paint tank is carried out [way] by the drive of a feeding pump, and returns a paint to a paint tank again through a pressure regulating valve, The paint return line which it branches [return line] from this paint feed pipe way, and a pressure regulating valve is arranged [return line] in the end face side, and returns a paint to a paint tank again, It is characterized by having the branching duct which branches from the aforementioned paint feed pipe way, and supplies a paint to a paint gun, and returns a paint to a paint return line, and a pressure regulation means to be prepared in this branching duct and to control the rate of flow by change of the path of passage.

[0006] and the connection hose in which you could constitute from the 2nd hose member of a minor diameter, and the aforementioned pressure regulation means was prepared by each branching duct from the 1st hose member which prepared the aforementioned pressure regulation means in each branching duct, and this 1st hose member -- a member -- you may arrange and constitute a sleeve inside

[0007]

[Function]

OPERATION

[Function] If a paint is fed with the aforementioned feeding pump, although the paint in a paint feed pipe way will suppress pulsation of a feeding pump by the aforementioned pressure regulating valve and will be maintained by 1 constant pressure by this composition, since it is quite long, when suppressing pulsation of a feeding pump, some time lag generates the aforementioned paint feed pipe way. The rate of flow is controlled by pressure regulation means by which the throb produced by this time lag was connected to each branching duct, consequently it is held at 1 constant pressure, a paint is supplied to each paint gun by 1 constant pressure in this state, and the paint in each branching duct realizes the pressure regulation effect.

EXAMPLE

[Example] Hereafter, the example of this invention is explained in full detail with reference to a drawing.

[0009] (Example 1) Composition explanatory drawing of one example of the paint circulation system concerning this invention in drawing 1 and drawing 2 are the detailed cross sections of the A section of drawing 1. The paint circulation system concerning this invention is equipped with the paint tank 1, the feeding pump 2, the paint feed pipe way 3, the paint gun 4, the paint gun paint charging-line section 5, and the paint return line 6, and has connected them to the aforementioned paint tank 1 by the suction side of the aforementioned feeding pump 2 on the aforementioned paint feed pipe way 3. And the filter 8 is formed near the discharge side of the feeding pump 2 of this paint feed pipe way 3, the back dam pump (pressure regulating valve) 9 is formed in about one paint tank of the paint feed pipe way 3, and the outlet side of this back dam pump 9 leads to the paint tank 1.

[0010] Moreover, the paint return line 6 has branched into the outlet side portion of the aforementioned filter 8 of the aforementioned paint feed pipe way 3, the pressure regulating valve 10 is formed in this paint return line 6, and the nose of cam of the paint return line 6 is again connected to the paint tank 1. And this paint return line 6 is held from the aforementioned paint feed pipe way 3 by the aforementioned pressure regulating valve 10 at low voltage.

[0011] The aforementioned paint gun paint charging-line section 5 is equipped with two or more branching ducts 11 which branched from the aforementioned paint feed pipe way 3. to these branching ducts 11 The check valve 13 located in the outlet side of a member 12 is arranged. joint -- a member 12 and this joint -- to the aforementioned paint return line 6 the aforementioned joint -- the joint of a member 12 and a same number individual -- a member 14 -- preparing -- **** -- the outlet side of the aforementioned check valve 13, and the joint by the side of the aforementioned paint return line 6 -- the member 14 is connected in the piping section 16 equipped with the pressure regulation means

[0012] the 1st hose by which this piping section 16 was connected to the outlet side of the aforementioned check valve 13 -- a member 17 and this 1st hose -- the joint by the side of a member 17 and the paint return line 6 -- the 2nd hose which connects a member 14 -- a member 18 -- constituting -- **** -- this 2nd hose -- a member 18 -- the 1st hose -- it is a minor diameter from a member 17 moreover, the aforementioned joint -- a member 12 -- a supply hose -- the paint gun 4 is connected by the member 19

[0013] Next, the operation of the paint circulation system constituted as mentioned above is explained. If a paint is fed with the aforementioned feeding pump 2, the paint in the paint feed pipe way 3 will suppress throb of the feeding pump 2 with the aforementioned back dam pump 9, and will be maintained by 1 constant pressure.

[0014] However, since the aforementioned paint feed pipe way 3 is quite long, when suppressing throb of the feeding pump 2, some time lag generates it. Members 17 and 18 are used, the 1st and the 2nd hose which replaced the throb produced by this time lag with the pressure regulating valve 33 arranged by each conventional branching duct 32, and were connected to each branching duct 11 in the paint circulation system of this invention -- The rate of flow is controlled by the member 18. the paint in each branching duct 11 -- the 1st hose -- a member 17 -- the 2nd hose of a minor diameter --

consequently, the paint in each branching duct 11 is held to 1 constant pressure -- having -- this state -- joint -- the supply hose installed from the member 12 -- a paint is supplied to each paint gun 4 by the member 19 by 1 constant pressure, and the pressure regulation effect is realized

[0015] (Example 2) The 2nd example of this invention is shown in drawing 3 and drawing 4 again. this example -- setting -- the joint by the side of a check valve 13 and the paint return line 6 -- a member 14 -- a connection hose -- a member 21 -- connecting - - this connection hose -- by arranging the sleeve 22 of a minor diameter in a member 21, the rate of flow of the paint in the branching duct 11 is controlled, the paint pressure in the branching duct 11 is held uniformly, and other composition is the same as the thing of the one above-mentioned example

[0016] therefore, the paint in each branching duct 11 is held to 1 constant pressure -- having -- this state -- joint -- the supply hose installed from the member 12 -- a paint is supplied to each paint gun 4 by the member 19 by 1 constant pressure, and the pressure regulation effect is realized

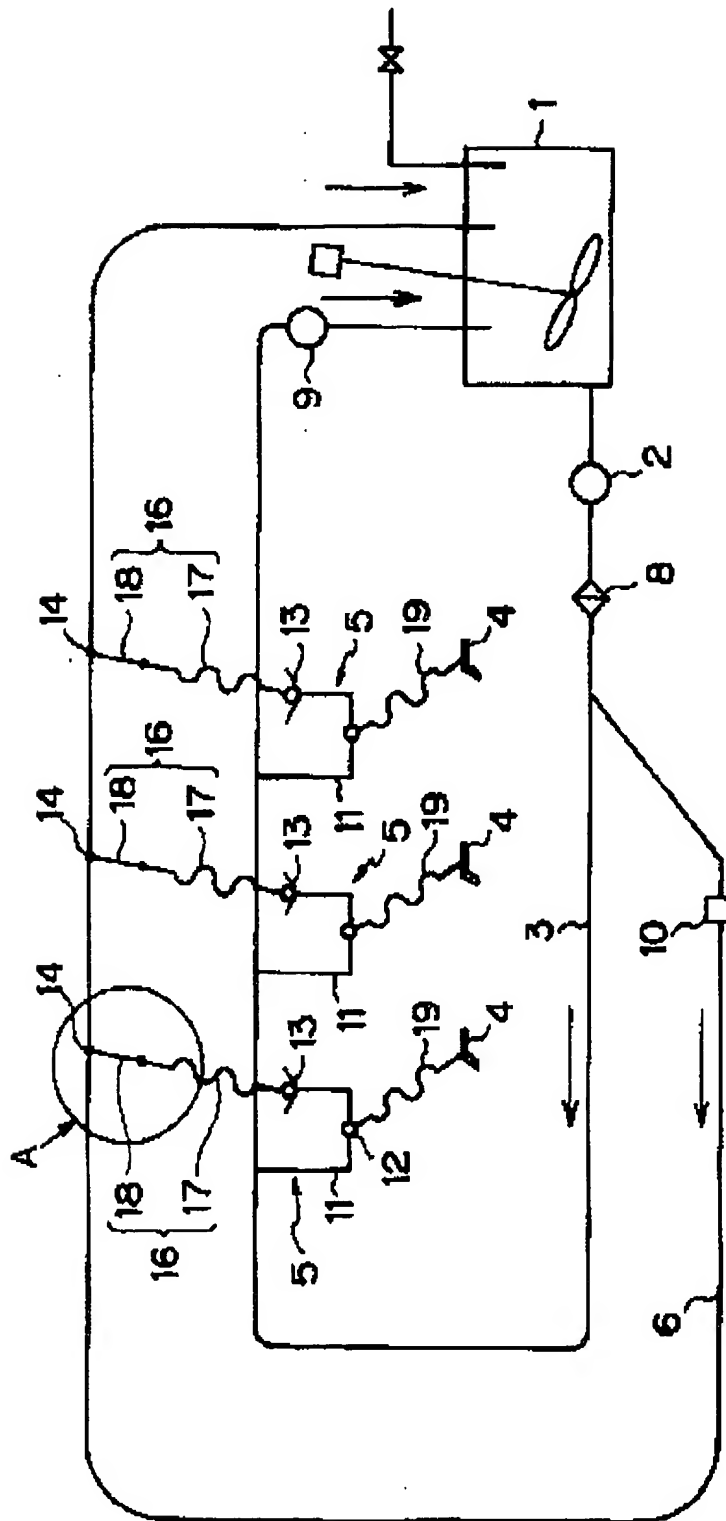
CLAIMS

[Claim(s)]

[Claim 1] The paint circulation system characterized by providing the following. The paint feed pipe way which circulation feeding of the paint in a paint tank is carried out [way] by the drive of a feeding pump, and returns a paint to a paint tank again through a pressure regulating valve. The paint return line which it branches [return line] from the aforementioned paint feed pipe way, and a pressure regulating valve is arranged [return line] in the end face side, and returns a paint to a paint tank again. The branching duct which branches from this paint feed pipe way, and supplies a paint to a paint gun, and returns a paint to a paint return line. A pressure regulation means to be prepared in this branching duct and to control the rate of flow by change of the path of passage.

[Claim 2] The paint circulation system according to claim 1 constituted from the 1st hose member which prepared the aforementioned pressure regulation means in each branching duct, and this 1st hose member by the 2nd hose member of a minor diameter.

[Claim 3] the connection hose in which the aforementioned pressure regulation means was prepared by each branching duct -- a member -- the paint circulation system according to claim 1 which arranged and constituted the sleeve inside



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|---|--------|----|----------|
| 1 | 塗料タンク | 10 | 圧力調整弁 |
| 2 | 圧送ポンプ | 11 | 分岐管路 |
| 4 | 塗装ガン | 17 | 第1のホース部材 |
| 6 | 塗料戻り管路 | 18 | 第2のホース部材 |
| 9 | 圧力調整弁 | | |